Micron

INSTALLATION
TECHNICAL FEATURES
CONFIGURATION SOFTWARE

Copy of the original Instructions

Contents

> ⚡ Micron light curtains **MUST NOT** be used as safety devices for protection of operators in hazardous areas.

INTRODUCTION

The Micron photoelectric light curtain is a multi-beam optoelectronic system consisting of an emitter and a receiver, used to detect or measure objects.
The two units can be synchronised via optical link or cable.
The status of the light curtain outputs (which reside in the receiver) changes as soon as a measurement is performed (or an object is detected).

Beam positioning

The following figure shows the arrangement of the beams and their numbering:
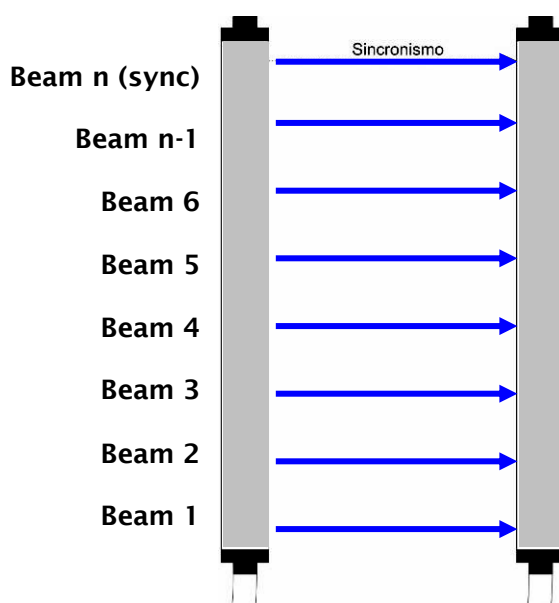

Figure 1

> ➔ Note that beams must always be numbered starting from the bottom, as shown in figure 1. If synchronised via cable, the last beam can also be used for measurements.
> ➔ With optical synchronisation, the uppermost beam must never be obstructed as this would interrupt the measurement function.

ELECTRICAL CONNECTIONS

Emitter connections (AV/AC/B models)
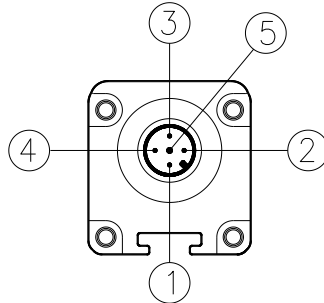
Figure 2

PIN	COLOUR	NAME	TYPE	DESCRIPTION
1	*Brown*	**24VDC**	-	24 VDC power supply
2	*White*	**RANGE**	INPUT	24 VDC input → HIGH range 0 DC input → LOW range
3	*Blue*	**0VDC**	-	0 VDC power supply
4	*Black*	**SYNC**	INPUT	RX-TX SYNC INPUT (OPTIONAL)
5	*Grey*	**PE**	-	Ground connection

Table 1 - M12, 5-pole

Emitter connections (C models)
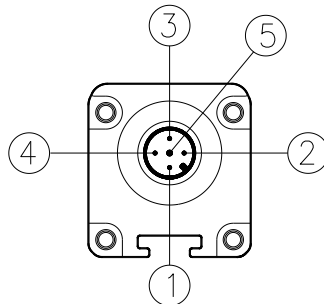
Figure 3

PIN	COLOUR	NAME	TYPE	DESCRIPTION
1	*Brown*	**24VDC**	-	24 VDC power supply
2	*White*	**RANGE**	INPUT	24 VDC input → HIGH range 0 DC input → LOW range
3	*Blue*	**0VDC**	-	0 VDC power supply
4	*Black*	-	-	Not used
5	*Grey*	**PE**	-	Ground connection

Table 2 - M12, 5-pole

Receiver connections (AV/AC models)
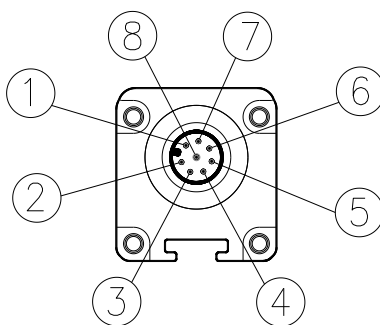
Figure 4

PIN	COLOUR	NAME	TYPE	DESCRIPTION	OPERATION
1	*White*	**OUT2/SYNC**	OUTPUT	Static output 2 / RX-TX sync	PNP 24 VDC, 100 mA
2	*Brown*	**24VDC**	-	24 VDC power supply	-
3	*Green*	**OUT1**	OUTPUT	Static output 1	PNP 24 VDC, 100 mA
4	*Yellow*	**INPUT**	INPUT	Input with programmable functions	Compliant with EN 61131-2
5	*Grey*	**ANALOG_OUT2**	OUT	Analog output 2 (AC)	4÷20 mA current output *
				Analog output 2 (AV)	0÷10 VDC voltage output *
6	*Pink*	**ANALOG_OUT1**	OUT	Analog output 1 (AC)	4÷20 mA current output *
				Analog output 1 (AV)	0÷10 VDC voltage output *
7	*Blue*	**0VDC**	-	0 VDC power supply	-
8	*Red*	**PE**	-	Ground connection	-

Table 3 - M12, 8-pole RX

* (Refers to 0 VDC, pin 7)

Receiver connections (B models)
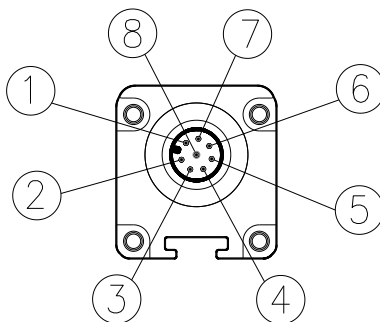
Figure 5

PIN	COLOUR	NAME	TYPE	DESCRIPTION	OPERATION
1	*White*	**OUT2/SYNC**	OUTPUT	Static output 2 / RX-TX sync	PNP 24 VDC, 100 mA
2	*Brown*	**24VDC**	-	24 VDC power supply	-
3	*Green*	**OUT1**	OUTPUT	Static output 1	PNP 24 VDC, 100 mA
4	*Yellow*	**INPUT**	INPUT	Input with programmable functions	Compliant with EN 61131-2
5	*Grey*	**LINE - (A)**	IN/OUT	RS485 -(A) serial line	RS-485
6	*Pink*	**LINE + (B)**	IN/OUT	RS485 +(B) serial line	RS-485
7	*Blue*	**0VDC**	-	0 VDC power supply	-
8	*Red*	**PE**	-	Ground connection	-

Table 4 - M12, 8-pole RX

Receiver connections (C models)
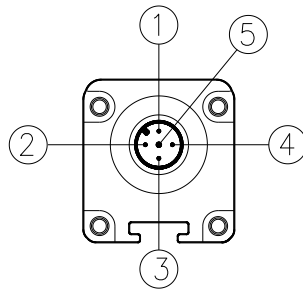
PIN	COLOUR	NAME	TYPE	DESCRIPTION	OPERATION
1	*Brown*	**24 VDC**	-	24 VDC power supply	-
2	*White*	**OUT2**	OUTPUT	Static output 2	PNP active low 24 VDC, 100 mA
3	*Blue*	**0 VDC**	-	0 VDC power supply	-
4	*Black*	**OUT1**	OUTPUT	Static output 1	PNP active high 24 VDC, 100 mA
5	*Grey*	**PE**	-	Ground connection	-

Table 5 - M12, 5-pole RX (C models)

Micron-PC connection via USB cable *(ReeR CSU M5 - 1250900)*

AC/AV/B models are fitted with an M5 connector (leading from the receiver) for connecting the light curtain to a PC on which the Micron configuration SW is installed.
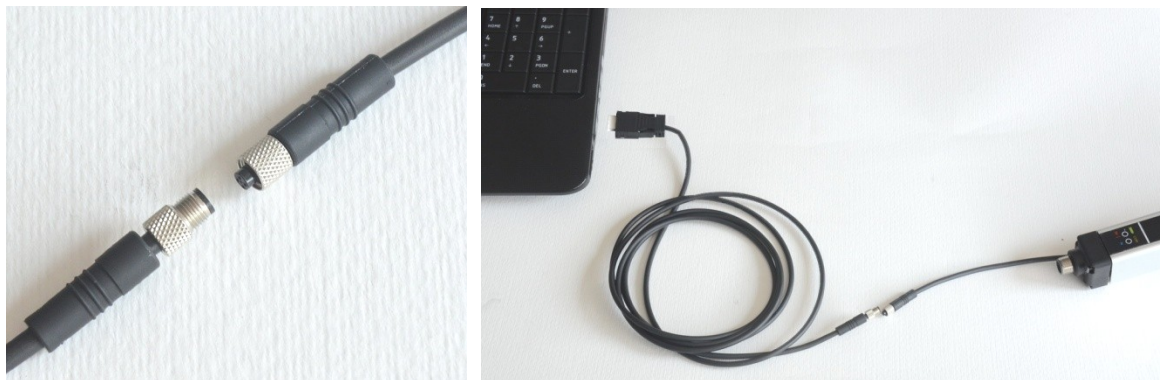
Figure 6

➡ First, connect the M5 connector to the light curtain, then insert the USB connector into the PC.

Warnings about connection cables

- Cables must not be more than 50 m long.
- Keep the power supply to the light curtain separate from that to other electric power equipment (electric motors, inverters, frequency converters) or other sources of disturbance.
- Connect the emitter and the receiver to the ground socket.
- Connection cables must follow different paths from other power cables.

➡ The emitter, the receiver and the device connected to the outputs must have the ground (0 VDC) connection in common.

INDICATOR LAMPS

Figure 7

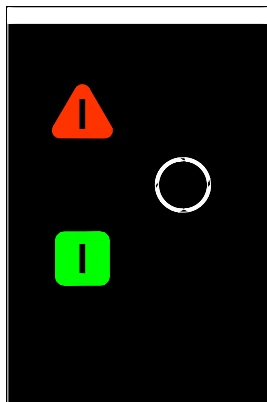| EMITTER (AC/AC/B/C)	
TRI-COLOUR LEDS **(Red/Green/Orange)**	**MEANING**
RED	System start.
RED BLINKING	FAIL condition
GREEN	Normal operation. At power on: • 2 slow blinks -> Low range • 2 fast blinks -> High range
ORANGE BLINKING	No synchronisation via cable
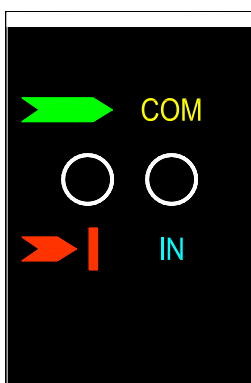
Figure 8

RECEIVER (AC/AV/B)		
BI-COLOUR **(Red/Green)**	**BI-COLOUR** **(Orange/Blue)**	**MEANING**
RED	-	Light curtain obstructed
GREEN	-	Light curtain clear
-	ORANGE	Connected to PC via USB
-	BLUE	Input active/recognition activated
-	BLUE BLINKING	Pattern recognition
-	BLUE 3 BLINKS	No pattern
RED BLINKING	-	FAIL condition
RED CONSTANT WITH 1 BREAK	-	No sync
RED / GREEN WITH 3 BREAKS	-	Analog Output Overload (AV models)
		Analog Outputs not conneceted (AC models)
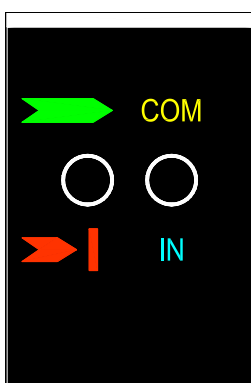
Figure 9

RECEIVER (C)		
BI-COLOUR **(Red/Green)**	**BI-COLOUR** **(Orange/Blue)**	**MEANING**
RED	-	Light curtain obstructed
GREEN	-	Light curtain clear
RED BLINKING	-	FAIL condition
RED CONSTANT WITH 1 BREAK	-	No sync

TECHNICAL FEATURES

Micron SAFETY CURTAIN TECHNICAL FEATURES			
Model	**AV/AC**	**B**	**C**
Operating range (REDUCED) m	0÷3 / 0÷8	0÷3 / 0÷8	0÷8 / 1÷18
Operating range (NORMAL) m	0÷8 / 1÷18	0÷8 / 1÷18	
Power supply VDC	24 ± 20%	24 ± 20%	24 ± 20%
Connections	M12 - 5-pole emitter / M12 - 8-pole receiver M5 - 4-pole connector (USB) for software configuration	M12 - 5-pole emitter / M12 - 8-pole receiver M5 - 4-pole connector (USB) for software configuration	M12 - 5-pole emitter / M12 - 5-pole receiver
Measurement time	**(70 us * number of beams + 500 us)*n** *(n = 1÷3 based on the scan cycles configured)*		**(70 us * number of beams + 500 us)*2**
Synchronisation	Optical or via cable, selectable		Optical
Max power W	1 (Emitter)/ 2 (Receiver)	1 (Emitter)/ 2 (Receiver)	1 (Emitter)/ 2 (Receiver)
Digital outputs	2 static outputs: 100 mA @ 24 VDC (configurable functions)	2 static outputs: 100 mA @ 24 VDC (configurable functions)	2 static outputs: 100 mA @ 24 VDC (antivalent logic)
Analog outputs (AC MODELS)	2 current outputs 4÷20 mA ± 2% (refers to 0 VDC) (configurable functions) *OPERATING WITH 100 ÷ 470 Ohm LOAD RESISTOR*	-	-
Analog outputs (AV MODELS)	2 voltage outputs 0÷10 VDC ± 2% (Refers to 0 VDC) / 10 mA max (configurable functions)	-	-
RS-485 output (B MODELS)	-	Compliant with the RS-485 standard min Baud Rate = 2400 / max Baud Rate =115200 (configurable function)	-
Inputs	Input with configurable functions (0/24 VDC)	Input with configurable functions (0/24 VDC)	-
Minimum duration of Input signal (ms)	5	5	-
Max. connect. length m	50	50	100
Operating temp. °C	-10 ÷ 55°C	-10 ÷ 55°C	-10 ÷ 55°C
Protection class	IP 65 - IP 67	IP 65 - IP 67	IP 65 - IP 67

Beam spacing 25 mm																				
Model	**152**	**302**	**452**	**602**	**752**	**902**	**1052**	**1202**	**1352**	**1502**	**1652**	**1802**	**1952**	**2102**	**2252**	**2402**	**2552**	**2702**	**2852**	**3002**
Measurement height (mm)	125	275	425	575	725	875	1025	1175	1325	1475	1625	1775	1925	2075	2225	2375	2525	2625	2825	2975
Number of beams	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120

Beam spacing 50 mm																				
Model	**155**	**305**	**455**	**605**	**755**	**905**	**1055**	**1205**	**1355**	**1505**	**1655**	**1805**	**1955**	**2105**	**2255**	**2405**	**2555**	**2705**	**2855**	**3005**
Measurement height (mm)	100	250	400	550	700	850	1000	1150	1300	1450	1600	1750	1900	2050	2200	2350	2500	2650	2800	2950
Number of beams	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60

Beam spacing 75 mm																				
Model	**157**	**307**	**457**	**607**	**757**	**907**	**1057**	**1207**	**1357**	**1507**	**1657**	**1807**	**1957**	**2107**	**2257**	**2407**	**2557**	**2707**	**2857**	**3007**
Measurement height (mm)	75	225	375	525	675	825	975	1125	1275	1425	1575	1725	1875	2025	2175	2325	2475	2575	2775	2925
Number of beams	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

English

Mechanical dimensions

LE brackets
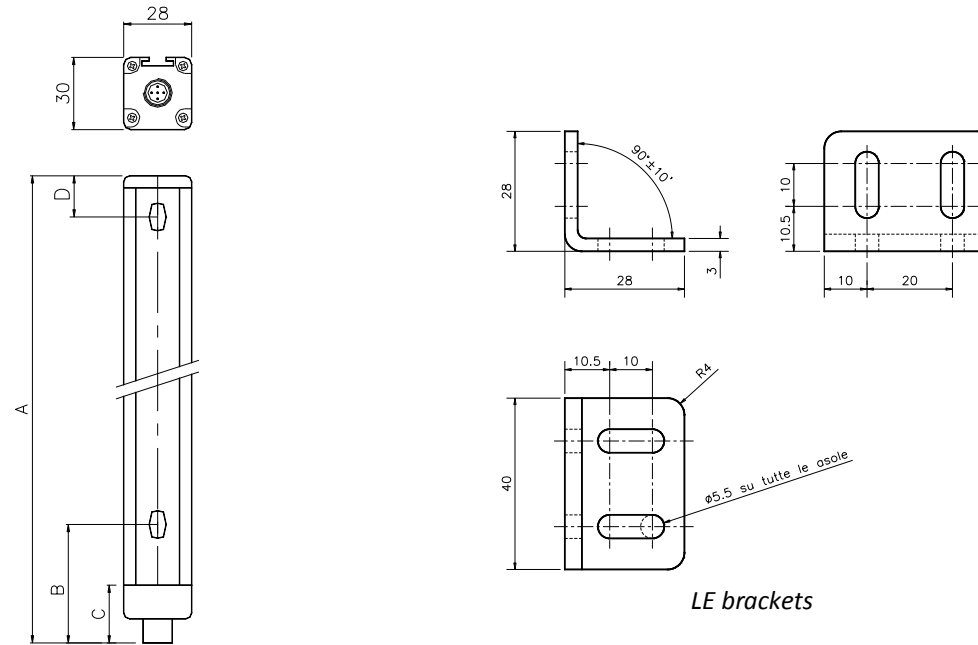
MODEL	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
Dimension A	213	363	513	663	813	963	1113	1263	1413	1563	1713	1863	2013	2163	2313	2463	2613	2763	2913	3063
Dimension B	69																			
Dimension C	29																			
Dimension D (beam spacing 25mm)	19																			
Dimension D (beam spacing 50mm)	44																			
Dimension D (beam spacing 75mm)	69																			
Mounting	2 LE TYPE brackets with 2 inserts									3 LE TYPE brackets with 2 inserts										

(all measurements are in mm)

CONFIGURATION SOFTWARE

Using the *ReeR MICRONCONFIGURATOR* program

The Micron is provided with a connector on the receiver (see the connections section) for connection to a PC via USB link.

The function programming system (*ReeR MICRONCONFIGURATOR*) can be used to configure the Micron by setting the conditions for activating the outputs (these can also be combined by using the NULL/AND/OR operators). The following conditions can be selected:

- **FBO**   First beam obstructed
- **LBO**   Last beam obstructed
- **CBO**   Central beam obstructed *****
- **NBO**   Number of beams obstructed
- **NCBO** Maximum number of consecutive beams obstructed *****
- **BNO**   Beam **n** obstructed

* If more than one zone is obstructed, the data refer to the zone with the highest number of obstructed beams.

A graphic interface can also be displayed for real-time monitoring of light curtain conditions. The following figures illustrate some screen pages of the *ReeR MicronConfigurator* program which can be used to configure the Micron's operating logic.

Preliminary Operations

Insert the MICRONCONFIGURATOR CD-ROM in the computer and follow the software installation instructions. To launch *MicronConfigurator*, double-click the icon created on the desktop.

LIGHT CURTAIN MODEL AND DATA
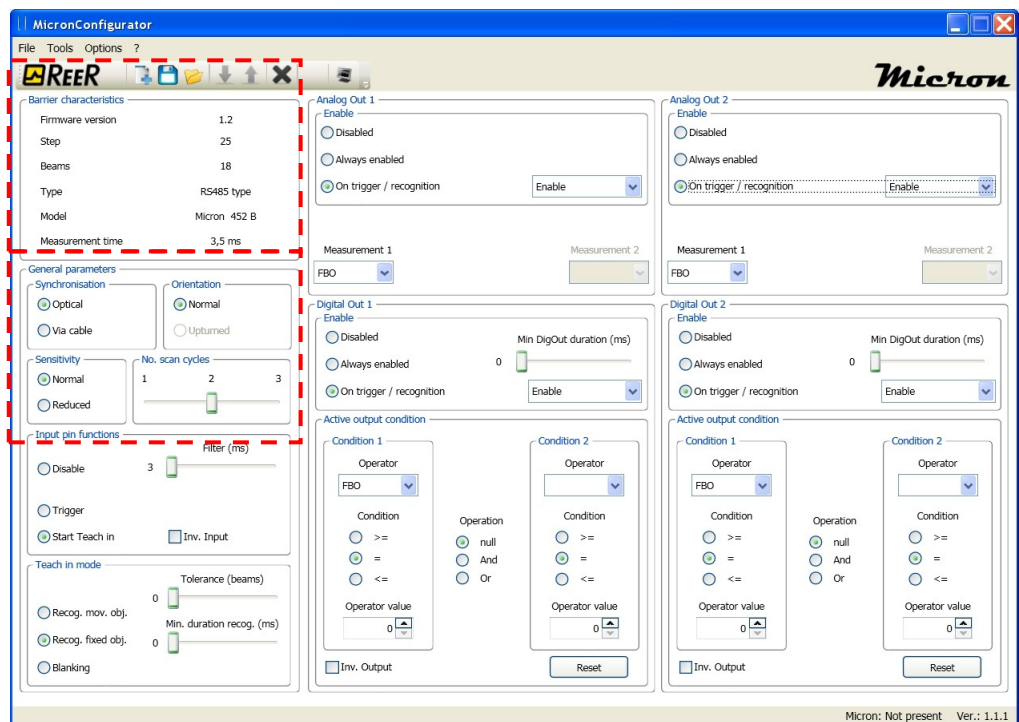
Micron INITIAL CONFIGURATION (1)

Figure 10

Even if the light curtain is not connected you can still fill in the configuration fields and save the configuration on the PC, using the ▦ icon. You will be able to retrieve the previously saved configuration later, by clicking 📂.

Connecting/disconnecting the light curtain

The **"Barrier characteristics"** panel in the top left corner is filled in automatically a few seconds after establishing the USB connection.

Click ⬆ (upload) to send the configuration to the Micron: at the end of this procedure the light curtain will automatically restart using the new configuration.

Click ⬇ (download) to read the configuration on the Micron; the program will display the data relating to the retrieved configuration.

Initial configuration (1)

Sync configuration:

TX-RX synchronisation can be programmed as follows:

SYNC VIA CABLE	Connect the *SYNC* signals of the emitter and the receiver.
OPTICAL SYNC	Sync the devices using the last beam of the light curtain.

➔ With optical synchronisation, the uppermost beam must never be obstructed otherwise the measurement function will be interrupted.
➔ With cable synchronisation, digital output 2 cannot be used.
➔ To switch from cable to optical synchronisation, the emitter must be switched off and then restarted.

Receiver sensitivity configuration:

The receiver's sensitivity can be adjusted depending on its distance from the emitter.

NORMAL SENSITIVITY	Recommended for d > 50 cm
REDUCED SENSITIVITY	Recommended for d < 50 cm

➔ With reduced sensitivity it is advisable to select the low range on the emitter.

Orientation configuration:

Beam numbering can be configured according to the orientation of the light curtain:

NORMAL ORIENTATION	Connectors **low** - first beam at **bottom**
UPTURNED ORIENTATION	Connectors **high** - first beam at **bottom**

➔ With optical synchronisation light curtain orientation must be normal.

Scan cycle configuration:

The number of cycles used to perform the measurement can be configured:

1	Single cycle: fast but inaccurate measurement sensitive to light disturbance
2	two cycles: measurement with good speed-precision balance
3	three cycles: accurate measurement, insensitive to light disturbance but slower

➔ Measurement time depends on the number of programmed cycles according to the formula:
(0,07ms * number of beams + 500 us)*n ms
(*n* configurable 1÷3 based on the scan cycles configured).
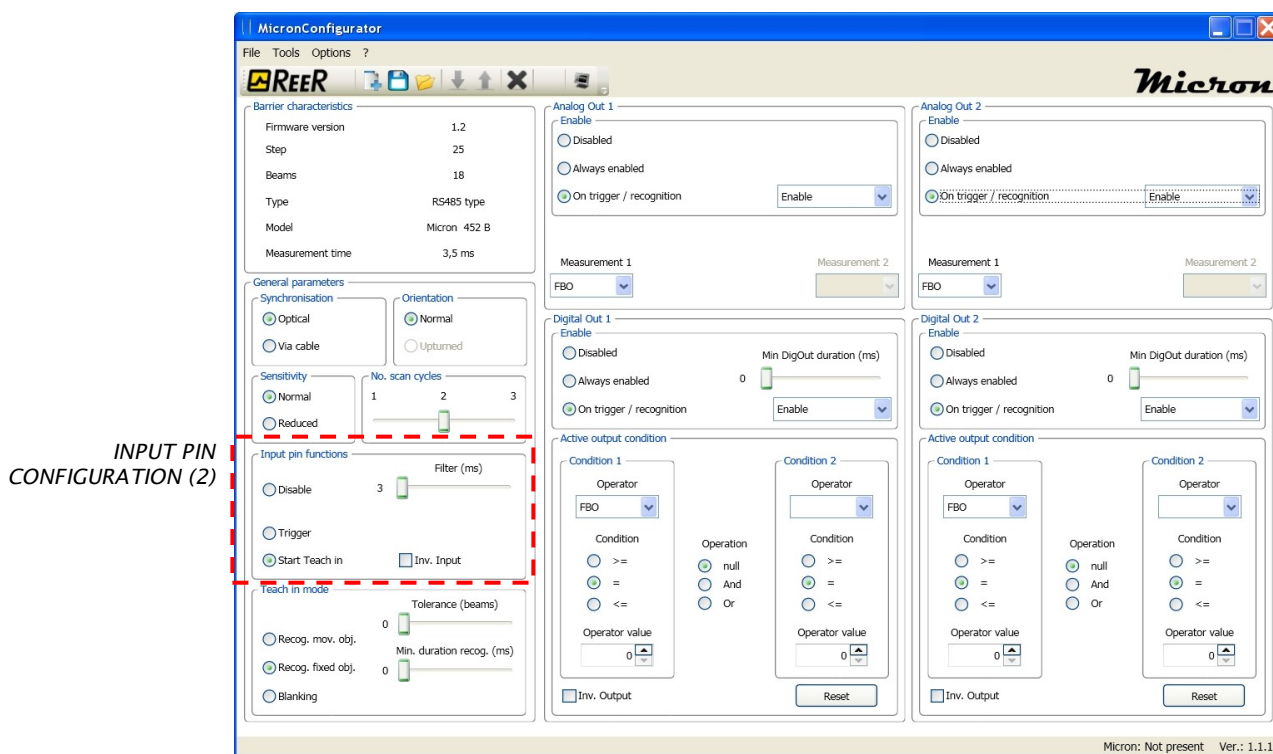
INPUT PIN CONFIGURATION (2)

Figure 11

Input pin configuration (2)

The input pin can be configured as follows:

- **No function** (disabled).
- **Trigger function:** this can be used to enable analog and digital outputs, stand-by and start/stop measurements. In this mode the minimum internal trigger time can be set to between 0 and 250 ms. (The BLUE LED lights up to indicate that the input is active).
- **Teach-in function** The pin can be used to teach the light curtain the pattern of an object using the following procedure:

	ACTION	BLUE LED
1	No pattern	*Blue LED blinks three times*
2	Connect the input pin to 24 VDC	*Blue LED blinks continuously*
3	Enter the object to be recognised in the light curtain's measurement field	*Blue LED blinks continuously*
4	Disconnect the input pin	*Blue LED blinks twice followed by a light curtain auto-reset procedure*
5	Recognition active	*Blue LED constantly on*
To delete the pattern of the object that has been saved, repeat the procedure described above with the measurement field empty. For recognition mode please refer to the relevant chapter.		

The filter on the input pin can be set to between 3 and 250 ms (impulses shorter than the set value are not considered). This signal is active high but the logic can be inverted (active low) using the *Inv.Input* box.

TEACH IN mode (3)

When the input pin is configured as *Teach in* the **"Teach in mode"** panel is active.
Teach in mode is used when the light curtain must recognise a specific object or pattern. There are three possible options:

	MODE	DESCRIPTION
1	Recognition of a moving object	*The object to be recognised must be compact (with no transparent parts) and obstruct a certain number of adjacent beams. The light curtain recognises the object saved previously* **in any position** *within the measurement field.*
2	Recognition of a fixed object (pattern)	*The object to be recognised can be of any shape, it need not be continuous and may have transparent parts.* *The light curtain only recognises the object if it obstructs the* **same position** *(in the measurement field) as when it was saved.*
3	Blanking	*The object to be recognised can be of any shape, it need not be continuous and may have transparent parts.* *In this case it will be parts of a machine (guards, arms, etc.) that obstruct part of the field of vision. The light curtain treats the object as* **non-existent** *and ignores it in the measurements.*

➔ In cases 1 and 2, the blue LED blinks to indicate that the object has been recognised. Recognition generates an internal trigger logic signal which can thus be used to activate outputs, enable stand by, etc.

➔ It is possible to select a tolerance of 0 to 2 beams for recognition.

➔ With particularly fast-moving objects, the minimum length of the internal trigger signal can be set to between 0 and 250 ms.

➔ The light curtain is capable of saving 2 different patterns for modes 1 and 2.

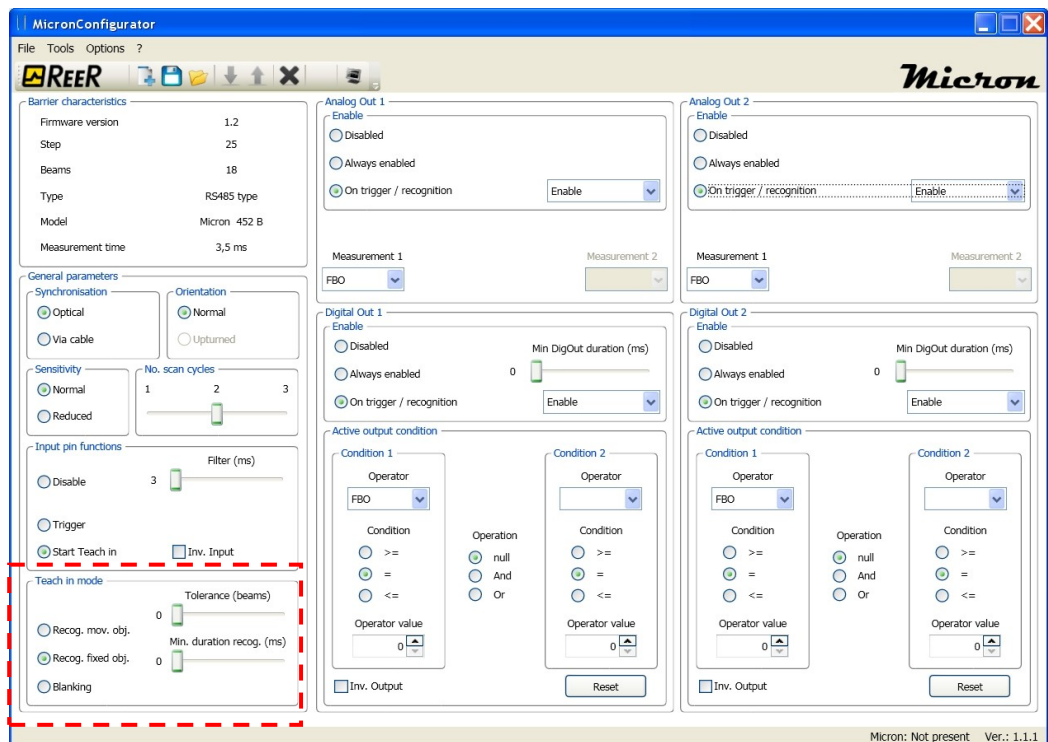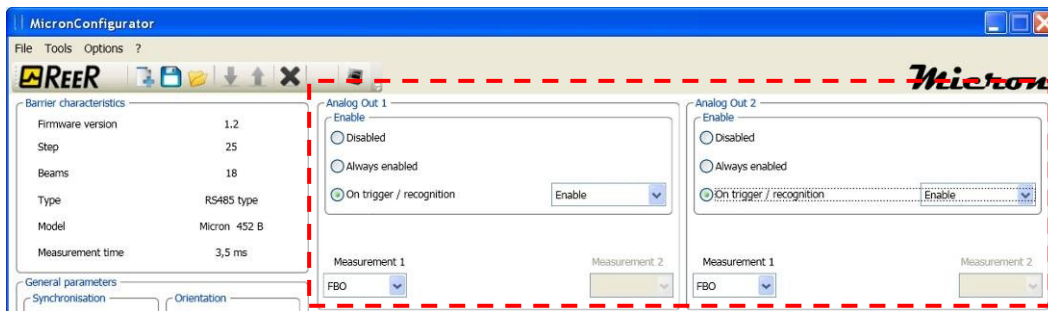➔ Click ❌ to delete previously saved patterns.

TEACH IN mode (3)

Figure 12

Analog output configuration (AC/AV models) (4)

Figure 13

ANALOG OUTPUT
CONFIGURATION (4)

It is possible to configure the conditions for activating each single output.
Use the "**ENABLE"** box to select the conditions for activating each analog output.

	MODE	DESCRIPTION
1	Output disabled	*The output is not active and gives 0 V in AV models and 4 mA in AC models*
2	Output always enabled	*The output always gives the analog value for the measurement selected.*
3	Upon trigger/recognition	*CHOOSE BETWEEN:*
a.	*Enable*	▪ *With **input not active/object not recognised** the output gives 0 V in AV models and 4 mA in AC models* ▪ *With **input active/object recognised** the output continuously gives the analog value corresponding to the measurement detected.*
b.	*Stand by*	▪ *With **input not active/object not recognised** the output continuously gives the analog value corresponding to the measurement detected.* ▪ *With **input active/object recognised** the output keeps the last value given.*
c.	*Start/stop*	▪ *With **input active/object recognised** the light curtain starts a measurement session by saving the highest value of the selected measurement.* ▪ *When **input deactivated/object not recognised**, the output gives the analog value corresponding to the maximum value detected for the selected measurement. This value stays on the output until the next Start/stop session.*
d.	*Switch measurement*	▪ *With **input not active/object not recognised** the output continuously gives the analog value corresponding to the measurement selected in the Measurement 1 box.* ▪ *With **input active/object recognised** the output continuously gives the analog value corresponding to the measurement selected in the Measurement 2 box.*

The following measurements can be selected to apply to the output:
- **FBO**   First beam obstructed
- **LBO**   Last beam obstructed
- **CBO**   Central beam obstructed
- **NBO**   Number of beams obstructed
- **NCBO**   Maximum number of consecutive beams obstructed

AV light curtains output a voltage that is proportionate to the measurement performed according to the following formula:

$$Vo=((10V/number\ of\ beams)*measurement)$$

E.g.: with a 30-beam light curtain and an NBO measurement of 15, the Micron outputs:

$$Vo=((10V/30)*15)=5V$$

AC light curtains output a current that is proportionate to the measurement performed according to the following formula:

$$Io=((16mA/number\ of\ beams)*measurement)+4mA$$

E.g.: with a 26-beam light curtain and an LBO measurement of 13, the Micron outputs:

$$Io=((16mA/26)*13)+4mA=12mA$$

Digital output configuration (5)

DIGITAL OUTPUT CONFIGURATION (5)

Figure 14

The conditions for activating each digital output can be selected in the "ENABLE" panel.

	MODE	DESCRIPTION
1	Output disabled	*The output is not active and gives 0 VDC*
2	Output always enabled	*The output is active and gives 0 VDC or 24 VDC depending on the set condition.* *(-> "Active Output Condition" panel)*
3	Upon trigger/recognition	*CHOOSE BETWEEN:*
a.	*Enable*	▪ *With **input not active/object not recognised** the output gives 0 VDC* ▪ *With **input active/object recognised** the output is active and gives 0 VDC or 24 VDC depending on the set condition*
b.	*Stand by*	▪ *With **input not active/object not recognised** the output gives 0 VDC or 24 VDC depending on the set condition* ▪ *With **input active/object recognised** the output keeps the last logic level given.*
c.	*Start/stop*	▪ *With **input active/object recognised** the light curtain starts a measurement session by saving whether (in this condition) the set condition occurs.* ▪ *When **input deactivated/object not recognised**, the digital output switches to 0 VDC or 24 VDC if the set condition occurred in the previous session. This output value is maintained until the next Start/stop session.*
d.	*Switch condition*	▪ *With **input not active/object not recognised** the digital output follows the condition set in the left-hand column (condition 1).* ▪ *With **input active/object recognised** the digital output follows the condition set in the right-hand column (condition 2).*
c.	*Copy*	▪ *The output copies the **input status/object recognised**:* ▪ *With **input active/object recognised** the digital output gives 24 VDC* ▪ *With **input not active/object not recognised** the output gives 0 VDC*

With fast output switching, the ***minimum output time*** can be set to between 0 and 250 ms.

The CONDITION box

The "CONDIZIONE" box can be used to set the condition for switching the output to LL1 (24 VDC):

First select operator 1 in the left-hand column. *The program offers a choice of the following conditions:*	*Select the condition:*	*Select the value.*
• **FBO** First beam obstructed • **LBO** Last beam obstructed • **CBO** Central beam obstructed • **NBO** Number of beams obstructed • **NCBO** Maximum number of consecutive beams obstructed • **BNO** Beam **n** obstructed	• >= • = • <=	E.g.: 12

Example:
to switch the output to LL1 if the last obstructed beam is more than or equal to 12, select: **LBO, >=, 12**
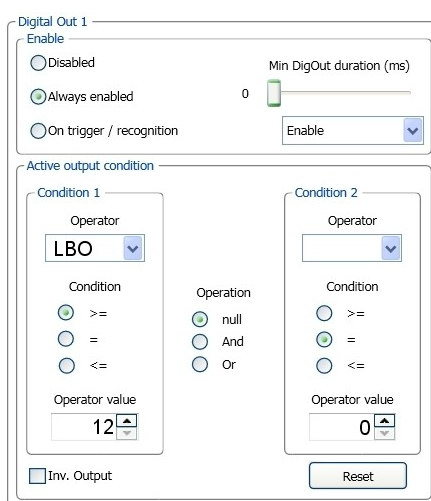
Figure 15

Use the OR and AND operators to define more complex logic conditions and establish relationships between the conditions in the LH column to those in the RH column.

Example:
to switch the output to LL1 if the last obstructed beam is more than or equal to 12, and there are 5 obstructed beams, select: **LBO, >=, 12 AND NBO, =, 5**
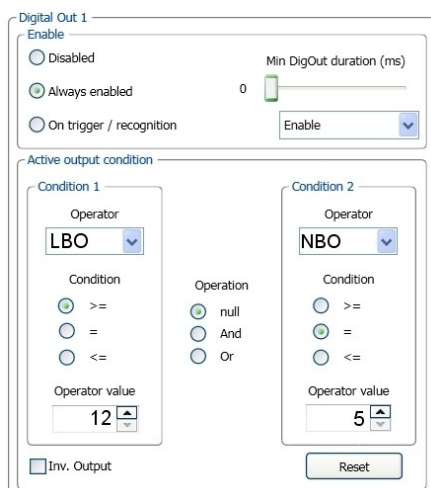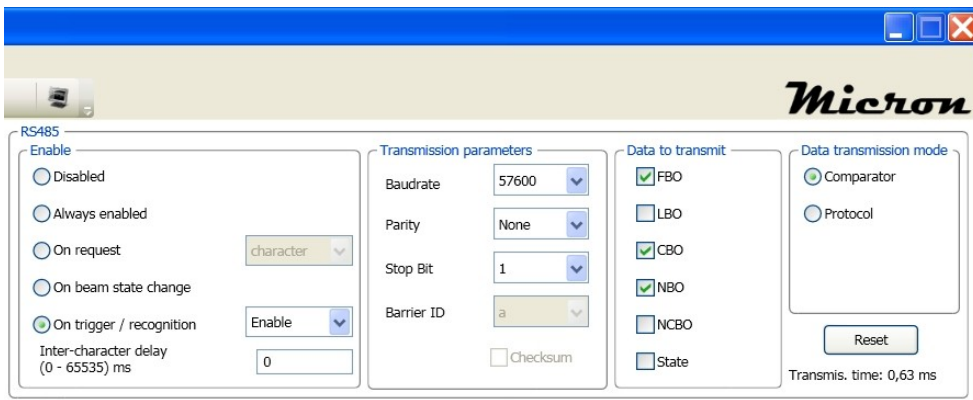

Figure 16

RS485 output configuration (B models) (6)

RS485 CONFIGURATION (6)

Figure 17

The conditions for activating RS485 serial data transmission can be selected in the "ENABLE" panel.

Enable

	MODE	DESCRIPTION
1	RS485 disabled	*Data transmission not active*
2	RS485 always enabled	*Data transmission always active*
3	RS485 upon request	*Data transmission only starts upon recognition of a character that is received. The character is user-definable*
4	RS485 upon beam status change	*Data transmission is activated when the beam status changes.*
5	Upon trigger/recognition	*CHOOSE BETWEEN:*
a.	Enable	▪ *With **input not active/object not recognised** data transmission is not active* ▪ *With **input active/object recognised** data transmission is always active*
b.	Stand by	▪ *With **input not active/object not recognised** data transmission is always active* ▪ *With **input active/object recognised** data transmission repeats the last datum sent*
c.	Start/stop	▪ *With **input active/object recognised** the light curtain starts a measurement session by saving the highest value of the selected measurement.* ▪ *When **input deactivated/object not recognised**, data transmission gives the maximum value corresponding to the selected measurement once*
d.	One shot	▪ *With **input not active/object not recognised** data transmission is deactivated* ▪ *With **input active/object recognised** data transmission gives the selected measurement once*

Inter-character delay: in the case of always active data transmission, the inter-character delay between one data packet and the next can be customised by changing the "INTERCHARACTER DELAY" parameter. The program checks that the selected inter-character delay is compatible with the data transmission parameters. An Inter-character delay of zero indicates that transmission of the next data packet will start as soon as the next measurement is available.

Data transmission parameters

|	MODE	DESCRIPTION
1	Baudrate	*2400, 4800, 9600, 19200, 38400, 57600, 115200*
2	Parity	*Even, odd, none*
3	Stop bit	*1, 2*
4	RS485 upon beam status change	*Data transmission is activated when the beam status changes.*
5	light curtain ID	*This character identifies the light curtain so that several light curtains can be connected on the same RS485 link.*
6	Checksum	*In data transmission mode Protocol adds a checksum byte to the data packet*

Data to be sent

FBO	First obstructed beam
LBO	Last obstructed beam
CBO	Central beam obstructed
NBO	Number of obstructed beams
NCBO	Maximum number of consecutive beams obstructed
Status	Status of all beams: 1 corresponds to beam clear, the first beam is represented by the MSB of the first byte. Bits with no corresponding beam are zero. The number of bytes transmitted is given by the number of beams/8 approximated by excess. E.g.: a 26-beam light curtain will send 26/8 = 3.25 -> 4 bytes in which of the last byte only the 2 most significant bits are valid.

Data transmission mode

In "*Comparator*" mode, the light curtain sends a number of bytes corresponding to the measurements selected in the "*Data to be sent*" section containing the current value of the measurements.

In "*Protocol*" mode the light curtain sends a data packet with the following format:

Micron ID	Data len	Date	Checksum
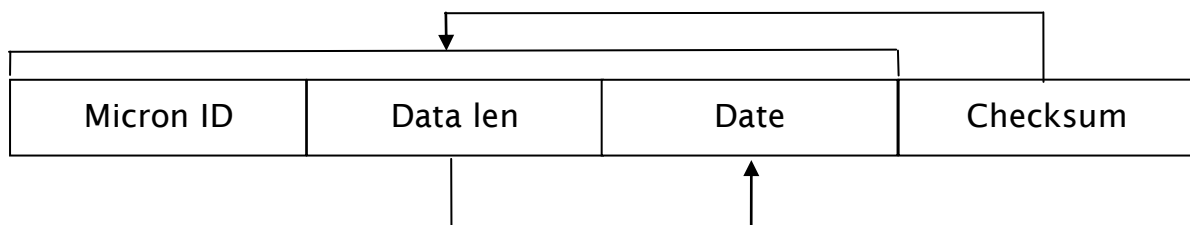
Micron ID is a 1-byte field. It contains the character selected in parameter 4 of the "*Data transmission parameters*" section.

Data len is a 1-byte field and contains the number of bytes corresponding to the measurements selected in the "*Data to be sent*" section.

The Data field consists of the number of bytes indicated by the previous Data len field and contains the current value of the measurements selected in the "*Data to be sent*" section.

Checksum is a 1-byte field and contains the complement to 1 of the sum of all the bytes in the message except itself.

The Checksum field is only present if selected in the "*Data transmission parameters*" section.

Monitoring light curtain status

AV/AC models

Click [icon] "MONITOR" to open a graphic user interface that displays light curtain operation in real time. The following information is given:

1. Model and data of the light curtain connected

2. Synchronisation (optical or via cable)

3. Sensitivity

4. Orientation (normal or upturned)

5. Scan cycles

6. Graphic representation of the MICRON beams (in real time)

7. Graphic representation of cable synchronisation (not displayed with optical synchronisation)

8. Measurements performed (in real time)

9. Input status (in real time)

10. Pattern present (in real time)

11. Object recognition (in real time)

12. Value of analog outputs (in real time)

13. Status of digital outputs (in real time)

Next time you click [icon] the program returns to the configuration screen page.
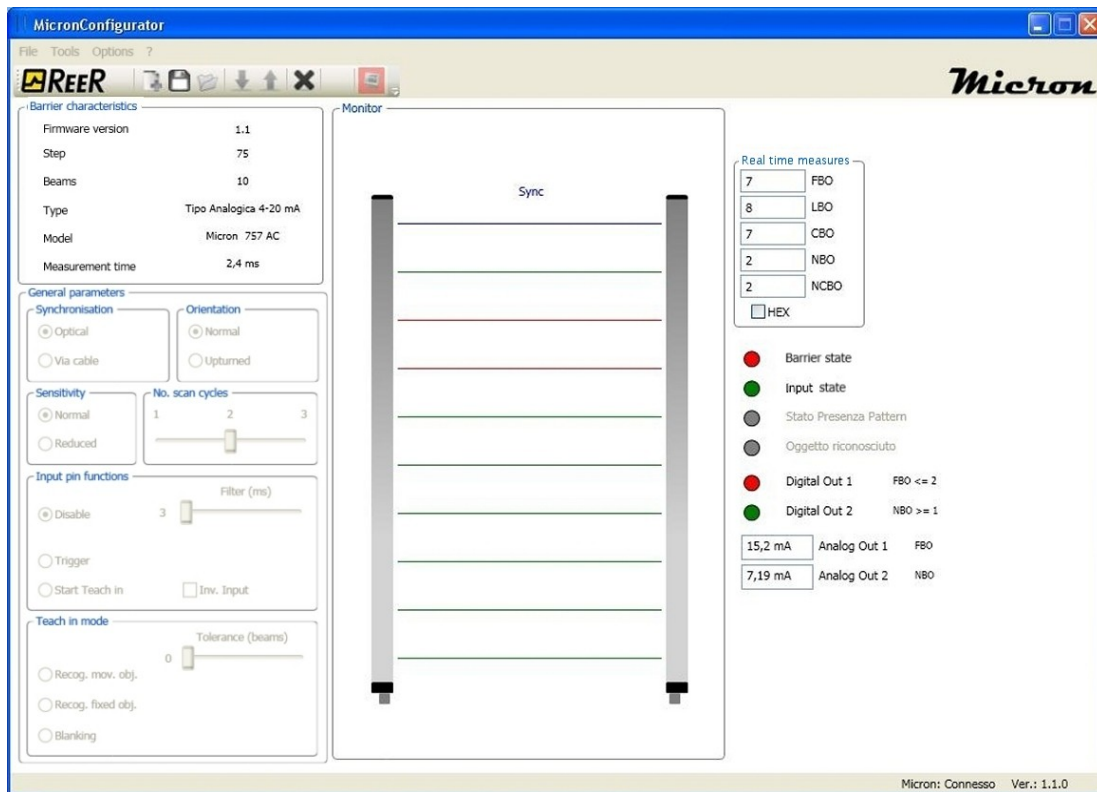

Figure 18 – AV/AC MODELS

B models

Click [icon] "MONITOR" to open a graphic user interface that displays light curtain operation in real time. The following information is given:

1. Model and data of the light curtain connected

2. Synchronisation (optical or via cable)

3. Sensitivity

4. Orientation (normal or upturned)

5. Scan cycles

6. Graphic representation of the MICRON beams (in real time)

7. Graphic representation of cable synchronisation (not displayed with optical synchronisation)

8. Data sent via the RS485 link (in real time). You may stop the flow of data, delete the contents of the window and copy the data to the Windows clipboard.

9. Data transmission time

10. RS-485 configuration

11. Measurements performed (in real time)

12. Input status (in real time)

13. Pattern present (in real time)

14. Object recognition (in real time)

15. Status of digital outputs (in real time)

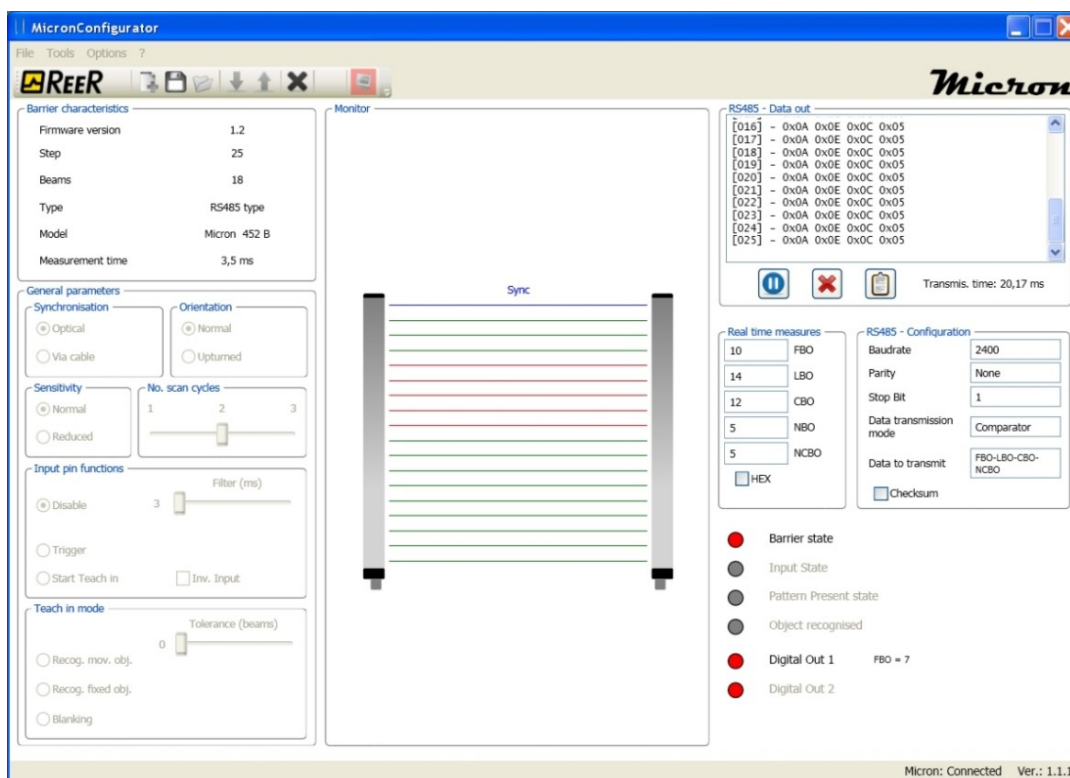Next time you click [icon] the program returns to the configuration screen page.

Figure 19 – B MODELS